

ARJUNA JEE 2023

Mole Concept

DPP-07

1. 5.85 g of NaCl are dissolved in 90 g of water. The mole fraction of NaCl is :
 (1) 0.1 (2) 0.01
 (3) 0.2 (4) 0.0196
2. The mole fraction of NaCl in a solution containing 1 mole of NaCl in 1000 g of water is:
 (1) 0.0177 (2) 0.001
 (3) 0.5 (4) 0.244
3. A solution contains one mole of alcohol and four moles of water. What are the fractions of water and alcohol?
 (1) $\frac{1}{4}$, $\frac{4}{1}$ (2) $\frac{4}{1}$, $\frac{1}{4}$
 (3) $\frac{4}{5}$, $\frac{1}{5}$ (4) $\frac{1}{5}$, $\frac{4}{5}$
4. If 15 g of Ca is present in 1000 ml of solution, find ppm of Ca.
 (1) 1500 (2) 15000
 (3) 15 (4) 150
5. Calculate the mole percentage of CH_3OH and H_2O respectively in 60% (by mass) aqueous solution of CH_3OH .
 (1) 45.8, 54.2 (2) 54.2, 45.8
 (3) 50, 50 (4) 60, 40
6. What is the meaning of 10% solution of NaCl?
 (1) 10 g NaCl in 100 gram of solution
 (2) 58.5 grams of NaCl in 100 grams of solution
 (3) 94 grams of NaCl in 100 grams of solution
 (4) 5.85 grams of H_2O in 100 grams of solution
7. Given, 5×10^{-3} kg of urea is dissolved in 2×10^{-3} kg of water. Calculate the percent by mass of urea.
 (1) 90% (2) 71.42%
 (3) 70% (4) 80%
8. Calculate the volume by volume percentage of a solution of 15 ml of alcohol in 60 ml of water.
 (1) 20 (2) 25
 (3) 30 (4) 50
9. Calculate the concentration in terms of mass by volume percentage of the solution containing, 2.5 g potassium chloride in 50 ml of potassium chloride (KCl) solution?
 (1) 25%
 (2) 20%
 (3) 5%
 (4) None of these
10. Density of 20%(w/v) solution of propane is 1.5 g/mL, then calculate mass percentage of propane is solution.
 (1) $\frac{20}{3}$ (2) 20
 (3) 40 (4) $\frac{40}{3}$

Answer Key

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|----|-----|-----|-----|
| 1. | (4) | 6. | (1) |
| 2. | (1) | 7. | (2) |
| 3. | (3) | 8. | (1) |
| 4. | (2) | 9. | (3) |
| 5. | (1) | 10. | (4) |



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